

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
2 December 2004 (02.12.2004)

PCT

(10) International Publication Number
WO 2004/103326 A1

(51) International Patent Classification⁷: A61K 7/075, 7/09

TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:

PCT/US2004/011535

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(22) International Filing Date: 15 April 2004 (15.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/471,059 16 May 2003 (16.05.2003) US

(71) Applicant (for all designated States except US): DOW CORNING CORPORATION [US/US]; 2200 West Salzburg Road, Midland, MI 48686-0994 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DECAIRE, Julie, Sue [US/US]; 2449 West North Union, Auburn, MI 48611 (US). JOHNSON, Bethany [US/US]; 518 East Chapel Lane, Midland, MI 48642 (US). LAFORE, Michael, Richard [US/US]; 4890 East River Road, Freeland, MI 48623 (US). LIN, Zuchen [US/US]; 5025 Foxpoint Circle, Midland, MI 48642 (US).

(74) Agent: DECESARE, James, L.; IP Dept. - Mail CO 1232, Dow Corning Corporation, 2200 West Salzburg Road, Midland, MI 48686-0994 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PERSONAL CARE APPLICATIONS OF EMULSIONS CONTAINING ELASTOMERIC SILANES AND SILOXANES WITH NITROGEN ATOMS

(57) Abstract: Oil-in-water (O/W) and water-in-oil (W/O) emulsions and microemulsions containing elastomeric silanes or siloxanes preferably having quaternary ammonium groups are generally made by reacting organic quaternary ammonium compounds having epoxide groups or halohydrin groups, with silanes or siloxanes having amino groups. The reaction is carried out in an aqueous polar phase containing a crosslinking agent and surfactant. The emulsions and microemulsions are especially useful for treating hair, skin, or the underarm.

552,537

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

CORRECTED VERSION

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
2 December 2004 (02.12.2004)

PCT

(10) International Publication Number
WO 2004/103326 A1

(51) International Patent Classification⁷: A61K 7/075, 7/09

(21) International Application Number:
PCT/US2004/011535

(22) International Filing Date: 15 April 2004 (15.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/471,059 16 May 2003 (16.05.2003) US

(71) Applicant (for all designated States except US): DOW CORNING CORPORATION [US/US]; 2200 West Salzburg Road, Midland, MI 48686-0994 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DECAIRE, Julie, Sue [US/US]; 2449 West North Union, Auburn, MI 48611 (US). JOHNSON, Bethany [US/US]; 518 East Chapel Lane, Midland, MI 48642 (US). LAFORE, Michael, Richard [US/US]; 4890 East River Road, Freeland, MI 48623 (US). LIN, Zuchen [US/US]; 5025 Foxpoint Circle, Midland, MI 48642 (US).

(74) Agent: DECESARE, James, L.; IP Dept. - Mail CO 1232, Dow Corning Corporation, 2200 West Salzburg Road, Midland, MI 48686-0994 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(iii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)
- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report

(48) Date of publication of this corrected version:
8 December 2005

(15) Information about Correction:
see PCT Gazette No. 49/2005 of 8 December 2005, Section II

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PERSONAL CARE APPLICATIONS OF EMULSIONS CONTAINING ELASTOMERIC SILANES AND SILOXANES WITH NITROGEN ATOMS

(57) Abstract: Oil-in-water (O/W) and water-in-oil (W/O) emulsions and microemulsions containing elastomeric silanes or siloxanes preferably having quaternary ammonium groups are generally made by reacting organic quaternary ammonium compounds having epoxide groups or halohydrin groups, with silanes or siloxanes having amino groups. The reaction is carried out in an aqueous polar phase containing a crosslinking agent and surfactant. The emulsions and microemulsions are especially useful for treating hair, skin, or the underarm.

WO 2004/103326 A1

INTERNATIONAL SEARCH REPORT

PCT/US2004/011535

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61K7/075 A61K7/09

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | US 2002/086935 A1 (LIN ZUCHEN ET AL) 4 July 2002 (2002-07-04) page 1, paragraph 18 – page 2, paragraph 31 page 4, paragraph 63 – paragraph 64 page 5, paragraph 74 page 5, paragraph 78 – page 6, paragraph 79 page 7, paragraph 98 – page 8, paragraph 99 the whole document | 12-20 |
| Y | EP 0 589 656 A (DOW CORNING) 30 March 1994 (1994-03-30) page 2, line 22 – page 4, line 14 examples | 1-11 |
| Y | ----- | 1-20 |
| | ----- | -/- |

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

| | |
|--|--|
| Date of the actual completion of the international search 13 October 2004 | Date of mailing of the International search report 28/10/2004 |
| Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | Authorized officer Ruckebusch, V |

INTERNATIONAL SEARCH REPORT

PCT/US2004/011535

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|----------|--|-----------------------|
| Y | EP 0 378 147 A (DOW CORNING) 18 July 1990 (1990-07-18) page 2, line 15 - line 50 page 3, line 19 - line 50 page 4, line 9 - line 20 page 5, line 16 - line 46 examples | 1-20 |
| A | WO 02/10256 A (SOCKEL KARL HEINZ ; LANGE HORST (DE); WAGNER ROLAND (DE); FIRSTENBERG) 7 February 2002 (2002-02-07) the whole document | 1-20 |
| E | EP 1 426 398 A (DOW CORNING) 9 June 2004 (2004-06-09) the whole document | 1-20 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/US2004/011535

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|--|----|------------------|---|--|
| US 2002086935 | A1 | 04-07-2002 | EP 1348004 A2 JP 2004521174 T WO 02059211 A2 AU 4164302 A EP 1343834 A2 JP 2004526001 T WO 0250166 A2 US 2003050393 A1 US 2003220425 A1 US 2003032717 A1 | 01-10-2003 15-07-2004 01-08-2002 01-07-2002 17-09-2003 26-08-2004 27-06-2002 13-03-2003 27-11-2003 13-02-2003 |
| EP 0589656 | A | 30-03-1994 | US 5281240 A AU 663971 B2 AU 4748793 A DE 69310655 D1 DE 69310655 T2 EP 0589656 A2 JP 6192054 A | 25-01-1994 26-10-1995 31-03-1994 19-06-1997 18-12-1997 30-03-1994 12-07-1994 |
| EP 0378147 | A | 18-07-1990 | US 4908355 A AU 624464 B2 AU 4770190 A CA 2005846 A1 DE 69012592 D1 DE 69012592 T2 EP 0378147 A2 JP 2288830 A JP 2918947 B2 | 13-03-1990 11-06-1992 12-07-1990 09-07-1990 27-10-1994 16-02-1995 18-07-1990 28-11-1990 12-07-1999 |
| WO 0210256 | A | 07-02-2002 | AU 9168601 A WO 0210256 A1 EP 1309648 A1 JP 2004521967 T | 13-02-2002 07-02-2002 14-05-2003 22-07-2004 |
| EP 1426398 | A | 09-06-2004 | US 2004102570 A1 EP 1426398 A1 JP 2004176070 A | 27-05-2004 09-06-2004 24-06-2004 |